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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/780,231	02/09/2001	Guillaume Comeau	78524-1.1	8170

7590 12/18/2003

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EXAMINER

SIDDIQI, MOHAMMAD A

ART UNIT PAPER NUMBER

2154

DATE MAILED: 12/18/2003



Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/780,231

Applicant(s)

COMEAU, GUILLAUME

Examiner

Mohammad A Siddiqi

Art Unit

2126

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

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Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02/09/01 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:



DETAILED ACTION

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Claims 1-29 are presented for the examination.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims 1,2,16,22, and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Feldman et al. (6516342) (hereinafter Feldman).

4. As per claims 1 and 22, Feldman discloses a method of providing an application layer access (col 1, lines 65-67) to a fixed memory (col 1, lines 59-67) address space of a device (col 2 lines 3-8), the method comprising:

constructing an object having elements which occupy said fixed memory address space (col 1, lines 60-63);

whereby the application is provided access to the fixed memory address space directly through said object (figure 1, element 11, col 1, lines 60-63).

5. As per claims 2 and 23, Feldman discloses identifying the fixed memory address space (figure 1, element 11, col 1, lines 60-63) to be a hardware peripheral's (col 1, lines 14-16) memory mapped (col 6, line 22-25) registers (col 4, lines 26-33 and col 6, lines 8-10).

6. As per claim 16, Feldman discloses a processor (col 1, lines 53 -55) comprising:

a plurality of peripheral memory mapped registers (col 5, lines 8-10) ;
an object anchored to said peripheral memory (col 1, lines 60-63) mapped registers (col 5, lines 8-10).

7. Claims 13,14,15,27,28, and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Slaughter et al. (6594708) (hereinafter Slaughter).

8. As per claim 13, Slaughter discloses a device comprising a memory (col 1, lines 63-67), wherein the memory comprises elements defining a Java like object such that the object overlaps with a predetermined address space of the memory (col 2, lines 45-46 and col 1, lines 55-61), the address space comprising a peripheral's memory mapped registers (col 6, lines 58-67 and col 7, lines 1-11).

9. As per claim 14, Slaughter discloses a device comprising a memory (col 1, lines 63-67), wherein the memory comprises a class which enables an object to be defined such that it overlaps with a predetermined address space of the memory (col 1, lines 55-67).

15. As per claim 15, Slaughter discloses a device comprising a memory (col 1, lines 63-67), wherein the memory includes: a Virtual Machine; and a class which enables an object to be defined such that it overlaps with a predetermined address space of said memory (col 58, lines 28-51).

10. As per claims 27 and 28, Slaughter discloses the object is adapted for use in a Java-like programming environment (col 58, lines 28-51).

11. As per claim 29, Slaughter discloses wherein the class is a Java class and said object is a Java object (col 58, lines 28-51).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 3-12,17-21, 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feldman et al. (6516342) (hereinafter Feldman) in view of Slaughter et al. (6594708) (hereinafter Slaughter).

14. As per claims 3 and 17, Feldman fails to disclose defining a class having base address and length parameters, which is used in constructing said object.

Slaughter discloses defining a class (col 1, lines 55-62) having base address and length parameters, which is used in constructing said object (col 17, lines 63-67).

It would have been obvious to one of ordinary skill in the art at the time of the invention to develop classes in Java programming language using object oriented design, as Slaughter teaches, because it will provide memory system and methods which would permit a single device driver for a peripheral device, thereby allowing operation of the peripheral device on all platforms.

15. As per claims 4 and 18, Feldman fails to disclose defining a Java class having type, base address and length parameters which is used in constructing the object.

Slaughter discloses defining a Java class having type, base address and length parameters (col 17, lines 63-67), which is used in constructing the object (col 17, lines 63-67).

It would have been obvious to one of ordinary skill in the art at the time of the invention to develop classes in Java programming language using object oriented design, as Slaughter teaches, because it will provide memory system and methods which would permit a single device driver for a peripheral device, thereby allowing operation of the peripheral device on all platforms.

16. As per claim 5, Feldman fails to disclose creating an object descriptor;

creating an object handle for the object which points to the object descriptor.

Slaughter discloses creating an object descriptor (col 5, lines 59); creating an object handle for the object which points to the object descriptor (col 5, lines 60-63).

It would have been obvious to one of ordinary skill in the art at the time of the invention to develop classes in Java programming language using object oriented design, as Slaughter teaches, because it will provide memory system and methods which would permit a single device driver for a peripheral device, thereby allowing operation of the peripheral device on all platforms.

17. As per claim 6, Feldman fails to disclose defining a Java class having base address, length and type parameters, which is used in constructing the object.

Slaughter discloses defining a Java class (col 4, lines 14-18) having base address, length and type parameters, which is used in constructing the object (col 17, lines 63-67).

18. As per claims 7 and 19, Feldman fails to disclose defining a new class having a class name <class name> as follows: <class name> (base, length)

where <class name> is the name assigned to the new class, base is a parameter which specifies a type of object, base is a parameter which specifies a beginning address, and length is a parameter specifying a number of elements in the object, which when constructed, generates an object descriptor specifying base length, and a generates a handle which points to the object descriptor.

Slaughter discloses defining a new class having a class name <class name> as follows: <class name> (base, length) where <class name> is the name assigned to the new class (col 17, lines 45-47), base is a parameter which specifies a type of object (col 17, lines 63-64), base is a parameter which specifies a beginning address (col 17, line 53), and length is a parameter specifying a number of elements in the object (col 17, line 54), which when constructed, generates an object descriptor specifying base length (col 18, lines 55-57), and a generates a handle which points to the object descriptor(col 18 , lines 55-65).

It would have been obvious to one of ordinary skill in the art at the time of the invention to develop classes in Java programming language using object oriented design, as Slaughter teaches, because it will provide memory system and methods which would permit a single device driver for a peripheral device, thereby allowing operation of the peripheral device on all platforms.

19. As per claim 8, Feldman fails to disclose generating an object descriptor specifying a default type.

Slaughter discloses generating an object descriptor specifying a default type (col 18, lines 55-65, and col 17, line 48).

It would have been obvious to one of ordinary skill in the art at the time of the invention to develop classes in Java programming language using object oriented design, as Slaughter teaches, because it will provide memory system and methods which would permit a single device driver for a peripheral device, thereby allowing operation of the peripheral device on all platforms.

20. As per claim 9, Feldman fails to disclose class is substantially defined in pseudocode.

Slaughter discloses a new class is substantially defined(col 17, lines 45-67) in pseudocode as follows:

Class AnchoredArray

{

public int element[];

public AnchoredArray(int baseAddress, int length)

```
{  
    element = lockDownElements(baseAdress,length);  
Static private native int[] lockDownElements(int baseAddress, int length);  
}  
void AnchoredArray.sub.-lockDownelements()  
{  
    int base = popStack();  
    int length = popStack();  
    int *handle = malloc(SIZE.sub.-OF.sub.-HEADER);  
    (instance*) handle-> type= DEFAULT.sub.-TYPE  
    (arrayStruct*) handle->arrayBase=base;  
    (arrayStruct*) handle->length=length- h; push handle;  
} ((col 17 and col 18)
```

As per claims 10, 20, 21, and 24, Feldman fails to disclose constructing the object comprises:

- defining a memory map having a predetermined address space for the hardware peripheral, and allocating at least one additional address space contiguous with the predetermined address space ;

- storing object header information for the object directly in the additional address space;

creating an object handle for the object which points to the object header.

Slaughter discloses constructing the object comprises:

defining a memory map having a predetermined address space for the hardware peripheral (col 6 lines 62-67), and allocating at least one additional address space contiguous with the predetermined address space (col 7 , lines 32-36);

storing object header information for the object directly in the additional address space(col 5, lines 5-13);

creating an object handle for the object which points to the object header(col 4, lines 8-11).

21. As per claims 11 and 25, Feldman fails to disclose defining a Java class having a base address parameter which is used in constructing said object.

Slaughter discloses defining a Java class having a base address parameter which is used in constructing said object(col 17, line 45-47).

It would have been obvious to one of ordinary skill in the art at the time of the invention to develop classes in Java programming language using object oriented design, as Slaughter teaches, because it will provide memory

system and methods which would permit a single device driver for a peripheral device, thereby allowing operation of the peripheral device on all platforms.

22. As per claims 12 and 26, Feldman fails to disclose the Java class is substantially defined in pseudocode as follows

Slaughter discloses the Java class is substantially defined in pseudocode as follows(col 17, lines 45-67):

Class AnchoredArray

```
{  
    public int element[];  
    public AnchoredArray(int baseAddress)  
    {  
        element = lockDownElements(type,baseAddress);  
    }  
    Static private native int[] lockDownElements(int baseAddress); }  
    Void  
    AnchoredArray.sub.-lockdownElements()  
    {  
        int base = popStack();  
        pushStack(base);
```

} (col 17 and col 18)

It would have been obvious to one of ordinary skill in the art at the time of the invention to develop classes in Java programming language using object oriented design, as Slaughter teaches, because it will provide memory system and methods which would permit a single device driver for a peripheral device, thereby allowing operation of the peripheral device on all platforms.

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

U.S. Patent 6490670 to Collins et al.

U.S. Patent 6275916 to Weldon et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammad A Siddiqi whose telephone number is (703) 305-0353. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John A Follansbee can be reached on (703)305-8498.

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The fax phone number for the organization where this application or proceeding is assigned is (703) 306-5404.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

MAS



JOHN FOLLANSBEE
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TECHNOLOGY CENTER 2100